

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A network element for use in an optical communication network, in particular a DWDM communication network, the network element comprising:
 - a plurality of receivers for receiving optical communication signals,
 - a plurality of transmitters for transmitting optical communication signals, and
 - a plurality of network connections, each network connection having an individual signal impairment characteristic,wherein the pluralities of receivers and transmitters employ a plurality of different modulation schemes, and
wherein the pluralities of receivers and transmitters are assigned to the network connections as a function of the individual signal impairment characteristics.

2. (original): The network element of claim 1, further comprising a multiplexer adapted to multiplex optical communication signals from the plurality of transmitters employing different modulation schemes onto a single optical output fiber.

3. (original): The network element of claim 1, further comprising a demultiplexer adapted to demultiplex optical communication signals from a single optical input fiber to the plurality of receivers employing different modulation schemes.

4. (original): The network element of claim 1, further comprising a lightpath provisioning unit configured to select one from the plurality of transmitters for a signal to be transmitted as a function of an impairment parameter corresponding to a desired network connection.

5. (original): The network element of claim 4, wherein the impairment parameter is a distance from the network element to a target node.

6. (original): The network element of claim 1, wherein the plurality of modulation schemes comprises direct modulation and external modulation of the optical communication signals to be transmitted.

7. (original): The network element of claim 1, wherein the plurality of modulation schemes comprises a plurality of different carrier wavelengths for modulation.

8. (original): The network element of claim 1, wherein the plurality of modulation schemes comprises a plurality of different bit rates.

9. (currently amended): An optical communication network comprising a plurality of nodes connected by a plurality of network connections, wherein at least some of the nodes comprise a network element as defined in ~~any of claims 1 to 8~~claim 1.

10. (currently amended): A use of a network element as defined in ~~any of claims 1 to 8~~claim 1 for upgrading an optical communication network in terms of distances allowed between network elements.

11. (original): A method of communicating messages within an optical communication network, in particular a DWDM communication network, the method comprising the steps of:

- providing a message which is to be transmitted from a source network element to a destination network element,
- modulating an optical carrier signal with the message in the source network element, and
- transmitting the modulated carrier signal across a network connection to the destination network element,

wherein the step of modulating comprises a first sub-step of determining an individual signal impairment characteristic of the network connection, and a second sub-step of selecting a modulation scheme from a plurality of different modulation schemes as a function of the individual signal impairment characteristic determined.